Claims

1. A nanowire-assisted method for mass spectrometric analysis of a specimen via desorption/ionization using laser as an energy source comprising:

(a) forming a nanowire spot by growing a plurality of minute nanowires in the selected area of a conductive material or a semiconductor board capable of applying voltage;

(b) placing said specimen containing a substance to be analyzed in said nanowire spot and crystallizing by drying; and

(c) performing mass spectrometric analysis of said ionized material to be analyzed in a state where voltage is applied in said board, while simultaneously irradiating laser onto said nanowire spot, wherein said specimen is adsorbed to and crystallized in said nanowire under reduced pressure, to transfer energy to said specimen through said nanowire.

2. In forming a nanowire spot in claim 1, said nanowire has a diameter of 500 nm or less and an aspect ratio of 10 or higher is allowed to grow.

3. In forming a nanowire spot in claim 1, said nanowire to be grown is selected from the group consisting of a single metal containing silicon, oxide, carbide, nitride, phosphide and arsenide semiconductor nanowires.

4. In forming a nanowire spot in claim 1, the area of said nanowire spot is formed so that it is equal to or smaller than the area for laser irradiation.

5. In claim 1, said specimen comprises a salt and a material to be analyzed, wherein the concentration of said salt is greater than 10 mM.

6. In claim 1 or 5, the concentration of said material to be analyzed in said specimen is contained less than 1 femto mole.

7. In claim 1, said laser to be irradiated has an energy greater than the bandgap of the nanowires grown in said semiconductor board according to the kind of nanowires to be selected.

8. In claim 1, the value of mass over electric charge (m/z) of ions is measured while performing mass spectrometric analysis of said ionized material.

9. A nanowire-assisted method for mass spectrometric analysis of a specimen via desorption/ionization using laser as an energy source comprising:

(a) manufacturing nanowire suspension containing a plurality of minute nanowires;

(b) forming a nanowire islet after drying said nanowire suspension coated on the selected area of a conductive material or a semiconductor board capable of applying voltage;

(c) placing said specimen containing a substance to be analyzed in said nanowire spot and crystallizing by drying; and

(d) performing mass spectrometric analysis of said ionized material to be analyzed in a state where voltage is applied in said board, while simultaneously

irradiating laser onto said nanowire spot, wherein said specimen is adsorbed to and crystallized in said nanowire under reduced pressure, to transfer energy to said specimen through said nanowire.

10. In manufacturing nanowire islet in claim 9, said nanowire suspension is manufactured as a mixed state of comprising nanowire in a volatile solution by separating nanowires from a semiconductor board by applying ultrasonic wave after placing said semiconductor board, wherein nanowires are grown, into said volatile solution.

11. In manufacturing nanowire suspension in claim 9, said nanowire has a diameter of 500 nm or less and an aspect ratio of 10 or higher.

12. In manufacturing nanowire suspension in claim 9, said nanowire to be grown is selected from the group consisting of a single metal containing silicon, oxide, carbide, nitride, phosphide and arsenide semiconductor nanowires.

13. In manufacturing nanowire islet in claim 9, said nanowire suspension is formed by spraying on the selected area of said semiconductor board.

14. In manufacturing nanowire islet in claim 9, the area of said nanowire spot is formed so that it is equal to or smaller than the area for laser irradiation.

15. In claim 9, said specimen comprises a salt and a material to be analyzed, wherein the concentration of said salt is greater than 10 mM.

16. In claim 9 or 15, the concentration of said material to be analyzed in said specimen is contained less than 1 femto mole.

17. In claim 9, said laser to be irradiated has an energy greater than the bandgap of the nanowires grown in said semiconductor board according to the kind of nanowires to be selected.

18. In claim 9, the value of mass over electric charge (m/z) of ions is measured while performing mass spectrometric analysis of said ionized material.

19. A nanowire-assisted method for mass spectrometric analysis of a specimen via desorption/ionization using laser as an energy source comprising:

(a) manufacturing nanowire suspension by mixing a sample solution containing a plurality of minute nanowires and materials to be analyzed;

(b) forming a nanowire islet comprising nanowire and a specimen adsorbed and crystallized to said nanowire after drying said nanowire suspension coated on the selected area of a conductive material or a semiconductor board capable of applying voltage;

(c) performing mass spectrometric analysis of said ionized material to be analyzed in a state where voltage is applied in said board, while simultaneously

irradiating laser onto said nanowire islet under reduced pressure to transfer energy to said specimen through said nanowire.

20. In manufacturing nanowire suspension in claim 19, said nanowire has a diameter of 500 nm or less and an aspect ratio of 10 or higher.

21. In manufacturing nanowire suspension in claim 19, said nanowire to be grown is selected from the group consisting of a single metal containing silicon, oxide, carbide, nitride, phosphide and arsenide semiconductor nanowires.

22. In claim 19, said specimen comprises a salt and a material to be analyzed, wherein the concentration of said salt is greater than 10 mM.

23. In claim 19 or 22, the concentration of said material to be analyzed in said specimen is contained less than 1 femto mole.

24. In manufacturing nanowire islet in claim 19, said nanowire suspension is formed by spraying on the selected area of said semiconductor board.

25. In claim 19, the area of said nanowire spot is formed so that it is equal to or smaller than the area for laser irradiation.

26. In claim 19, said laser to be irradiated has an energy greater than the bandgap of the nanowires grown in said semiconductor board according to the kind of nanowires to be selected.

27. In claim 19, the value of mass over electric charge (m/z) of ions is measured while performing mass spectrometric analysis of said ionized material.